Looking Behind the Scenes

The Smart Travel Program includes multiple facilities, projects, technological tools, and skilled staff that work together to monitor traffic, provide traveler information, manage the transportation system, and respond to highway incidents.

Smart Traffic Center

VDOT's Smart Traffic Center (STC) in Northern Virginia is the nerve center of an integrated system of advanced technology, including computer software, traffic cameras, ramp meters, lane control signals, reversible HOV lane control gates, and road sensors. From the STC, VDOT monitors and manages traffic, recognizes and responds to incidents, and instantly delivers information to motorists.

Smart Traffic Signal System

Northern Virginia's Smart Traffic Signal System (STSS) installs, monitors, controls, and maintains over 1,000 traffic signals throughout the region. Each signal is connected to a central computer system that continuously monitors the real-time signal status, collects traffic flow information, and supports signal-timing adjustments.

Through technology, STSS is able to manage traffic flow from a centralized location. Engineers customize signal timing to maximize traffic flow based on time of day and congestion. VDOT continuously re-evaluates its signal timing operations in response to the traffic patterns.

Emergency and Incident Management

The Smart Travel Program is VDOT's primary tool for emergency and incident management. In the event of a roadway incident, natural disaster, or unexpected emergency, VDOT's emergency response management capabilities are critical to saving lives and restoring traffic flow.

Whether it's helping stranded motorists, alerting fire or rescue, or assisting with hazardous material cleanup, VDOT is always ready. Information is gathered and processed at STC and appropriate resources, including VDOT's Safety Service patrollers, are contacted and directed to the incident. During a crisis, the ability to gather information, initiate responses, and coordinate the activities of various agencies is critical.

• VDOT participates in Virginia's Operational Information System (VOIS), a statewide, multi-agency communications system that facilitates accurate and timely emergency related information.

• VDOT is a lead participant in a multi-jurisdictional wireless network project, the Capital Wireless Integrated Network (CapWIN, www.capwin.org). This initiative enhances emergency response communications between multiple jurisdictions and disciplines throughout the region.

• VDOT contracts with private sector firms to make traffic camera images available to first responders, giving them real-time traffic video image updates as they travel to emergency scenes.

Knowing What's Available to Ease Your Commute

Safety Service Patrol

As a primary mission, patrollers keep the travel lanes open by identifying and clearing incidents, clearing debris from the roadway, and quickly removing accidents from travel lanes. Patrollers also assist stranded motorists. In operation since 1973, the Safety Service Patrol is a critical element of incident management and a cost effective component of traffic management. Patrollers are in constant contact with STC and the Virginia State Police and are able to request further assistance if necessary.

Traveler Information

A key function of Smart Travel is providing instant, accurate, and useful information to motorists. VDOT engages in public-private partnerships that pool resources and leverage assets to provide traveler information service sooner than it could provide services on its own to the traveling public.

• Changeable Message Signs and the Highway Advisory Radio (broadcasting on 1620 AM at strategic locations) help motorists make informed decisions on the road.

• At no cost to taxpayers, VDOT partners with the private sector and other government agencies to provide the public with real-time traffic images in the Washington Metropolitan area. Motorists can view the traffic images at **www.Trafficland.com**.

• Another of VDOT's many partnerships with the private sector makes real-time traffic information on a color-coded map available to the public. The real-time traffic condition can be viewed on the internet at **www.traffic.novacommute.com**.

• Virginia is an early implementer of the new national 511-traveler information standard. Dialing 511 or visiting **www.511Virginia.org** currently provides motorists along Virginia's Interstate 81 with accessible, real-time information on travel alerts, road and traffic conditions, weather, food and lodging, current events, tourist attractions, and trip routing. Plans call for statewide expansion of the 511 program in early 2005.

Smart Tag - EZ Pass

Electronic Toll Collection (ETC) allows VDOT to efficiently process ever-increasing traffic volumes on toll roads, easing congestion and saving motorists time. Now known as Smart Tag, Virginia's ETC system is integrated with the EZ Pass system that is used throughout the Northeast and Mid-Atlantic regions.

An ETC transponder placed on or inside a vehicle electronically communicates with a lane computer and automatically deducts the toll from a driver's pre-paid account.

ETC has been available on the Dulles Toll Road and the Dulles Greenway since 1996.

ETC Smart Tag transponders purchased in Virginia are valid in all states participating in EZ Pass, effective Fall 2004, allowing for seamless toll payment from Virginia to Maine. Visit **www.smart-tag.com** for more information.

Mapping the Future

VDOT has developed a Smart Travel Program Plan that describes the vision, goals, objectives, and functions that support successful implementation of Smart Travel in Northern Virginia. To download the documents visit **www.VirginiaDOT.org/infoservice/smart-default.asp**. Through the ITS Architecture, VDOT facilitates communication between state, county, and local transportation, law enforcement, and emergency service agencies, federal agencies and counterpart agencies in Maryland and the District of Columbia. The Architecture is a map of existing linkages and a plan for future ITS implementation that can evolve to meet changing conditions. VDOT actively seeks ideas and comments from those who use and benefit from Northern Virginia's transportation system. For more information on the VDOT ITS Architecture, visit **www.vdot-itsarch.com.**

Helping Northern Virginia

Northern Virginia's Smart Travel Program benefits residents, travelers, and businesses by providing timely information to help drivers make informed decisions on when, where, and how to travel. It also enables faster response times by public safety personnel in times of emergencies. Smart Travel helps keep freight shipment costs down, lowers vehicle emissions, and reduces stress and frustration for everyone on the road.

Striving for Excellence

The Smart Travel Program regularly upgrades software, equipment, functions, and technical capabilities. Inter-agency coordination, cooperation, and information sharing is a priority. The program continues to grow and change to meet dynamic transportation needs.

The Smart Travel Program includes multiple facilities, projects, technological tools, and skilled staff that work together to monitor traffic, provide information to travelers, manage the transportation system, and respond to incidents. Although each element is essential to the overall success of Smart Travel, each is unique in its blend of technology, resources, and people power.

The Smart Travel Program participates in and benefits from the University of Virginia's Smart Travel Lab, a joint effort between the University and the Virginia Transportation Research Council. The lab has direct access to data derived from Smart Travel systems and conducts hands-on research and development, provides technical support to VDOT's Smart Travel Program, and develops and delivers innovative education and training programs. VDOT, working with Virginia Tech and Federal Highway Administration (FHWA), constructed a Smart Road, a fully equipped 1.7-mile test bed where safety advances and innovations can be analyzed under a broad range of traffic conditions. VDOT also partners with the National ITS Implementation Research Center run by George Mason University. The center is a consortium of Virginia's transportation research entities that conducts research, education, and outreach to determine the most effective deployment of ITS throughout Virginia.

Smart Travel VIRGINIA

VDOT Virginia Department of Transportation

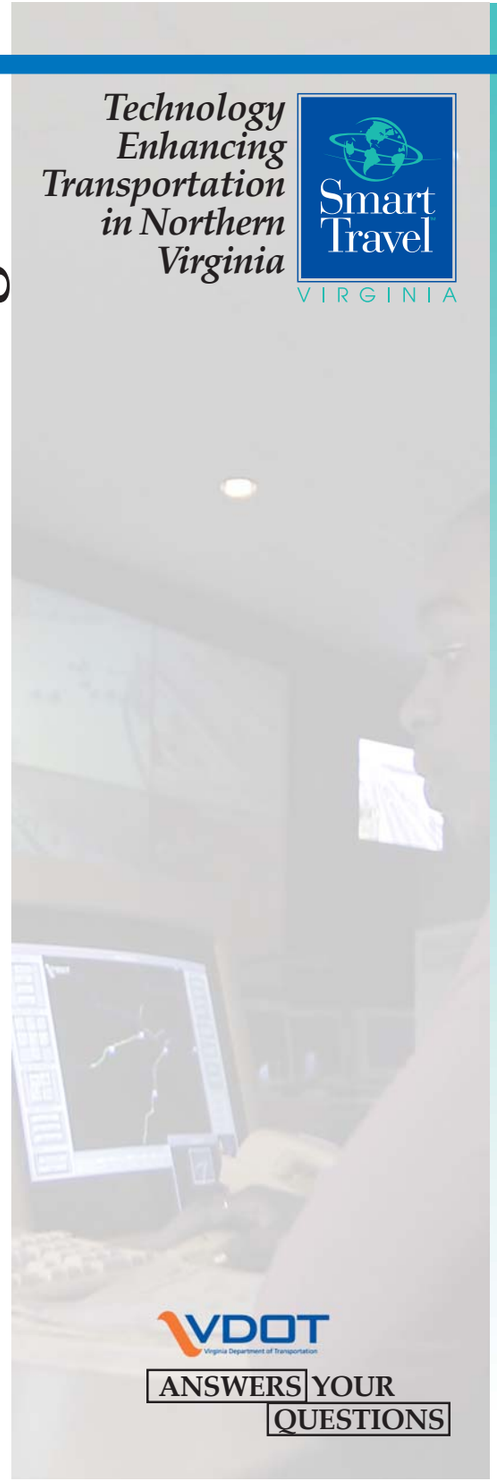
For more information on the Smart Travel Program visit
www.VirginiaDOT.org/infoservice/smart-travel-nova.asp
Virginia Department of Transportation
703-383-VDOT
TTY users only, call the Virginia Relay Center at
1-800-828-1120
e-mail: novainfo@VirginiaDOT.org

www.VirginiaDOT.org

VDOT's Smart Travel Program

Technology Enhancing Transportation in Northern Virginia

Smart Travel VIRGINIA



Smart Travel is an efficient use of public funds that saves lives, time, and money.

The Virginia Department of Transportation's (VDOT) Smart Travel Program combines the efforts of Virginia's state and local government agencies, as well as the efforts of the private sector using technology to enhance transportation.

Smart Travel

- **enhances safety and security**
- **provides information to motorists**
- **improves mobility**
- **maximizes the value of transportation systems**

Working for Northern Virginia

In 1985, VDOT launched the facility that would evolve into today's Smart Traffic Center, followed in 1994 by a Smart Traffic Signal System. These form the core of a robust multi-functional Intelligent Transportation System (ITS), known as Smart Travel.

The Smart Travel Program uses advanced technology such as computer software, hardware, and electronic field equipment to improve transportation. In Fairfax, Arlington, Loudoun, and Prince William Counties, Smart Travel improves mobility, increases safety, and promotes regional security.

The Smart Travel Program brings projects and activities from vision to reality and continuously improves those projects. The process includes detailed planning, implementation, and evaluation. Evaluation results are used to plan and implement improvements.